



Minutes City Council's Community Sustainability Technology Sub-Committee May 14, 2010

Minutes of the meeting of the City Council's Community Sustainability Technology Subcommittee held on Friday, May 14, 2010, 9:00 a.m. in the 3rd Floor Conference Room, Tempe City Hall, 31 E. 5th Street, Tempe, Arizona.

Sub-Committee Present:

Vice Mayor Shana Ellis

City Staff Present:

Lisa Collins, Dev Svcs/Comm Liaison

Decima Sever, Dev Svcs

David McNeil, Environ Svcs

Amber Wakeman, Comm Rel

Jan Hort, City Clerk

Lisa Novia, Dev Svcs

Bonnie Richardson, PW

Kristen Battafarano, Dev Svcs

Guests Present:

Joe Zepp, Green Fuel Technologies

Dustin Hamby, Green Fuel Technologies

Vice Mayor Ellis called the meeting to order at 9:05 a.m.

Agenda Item 1 – Approval of March 12, 2010 minutes

The minutes were approved as presented.

Agenda Item 2 – Public Appearances/Call to the Public

None.

Agenda Item 3 – Solar Demonstration Update

Lisa Collins reported that staff is working on an RFP (Request for Proposals) for the design of bi-facial panels and solar asphalt shingles for a solar demonstration project. Staff is in the process of researching whether or not an RFP would best be administered via the purchasing procurement process or through an engineering contract. Even though this is an engineering type of a contract, it is unique because it is government funded and the City must match the funds through its budget or donations. Project funding will be used to build a ramada with solar technology that will be designed to provide electricity for the splash playground at the Tempe Beach Park. Staff will be updating the committee next month on this process.

Agenda Item 4 – Green Fuel Technologies (GFT)

Dustin Hamby gave an overview of the pilot program of Green Fuel Technologies which originated in Kyoto, Japan. Mr. Hamby stated that Tempe has ideal demographics for this project. Green Fuel Technologies is a renewable technology energy driven company that services residential and commercial clients. Mr. Hamby gave the following facts about GFT:

- Provides design engineering, procurement, and construction for all aspects of renewal energies
- Installed more than 1.4 megawatts of solar in the valley since 2007
- They have over 142 mega watts of solar and development in Arizona, including utilities and commercial/private industry
- Industry leaders for financial structures for non-profits and municipalities
- Corporate partners with Round Rock who are focused on tax credit financing
- Corporate partner is BP Solar who are the leaders in solar panel technologies and have been making solar panels for over 35 years

GFT is proposing that Tempe “Plug into the Sun” which is the deployment of Electronic Vehicle Charging Stations (EVCS). These solar parking meters represent long terms revenue streams for the City. These units utilize solar photovoltaic technology to offset energy demands of both EVCS and City operated facilities. Right now they would like to see between 8-15 electric vehicles within the City of Tempe vehicle fleet to offset costs. The goal of this program is for it to be budget neutral.

Parking meter chargers for EVCS are 240 volt and fully networked and interactive with utility companies to manage the demand side. Outlets are de-energized until a user is authenticated and a cord is plugged into car and there is a lock/release security cord to avoid cord theft. Vehicle manufacturers that make cars that are compatible with this charger system include Tesla, Nissan Leaf, GM Volt and the Fisker Karma.

Joe Zepp explained the E-Tech is not part of their program. E-Tech has based their entire company on making charging stations for airports, so they have no capabilities to do what GTF is proposing. E-Tech also does not have the product on hand and will refer the customer to a third party for product assistance.

Bonnie Richardson asked if the EVCS will be compatible with E-Tech stations since E-Tech will soon be trying to ask the cities to install charger stations along the freeway to connect Phoenix to Tucson. Mr. Hamby explained that with new regulations all plugs must be the same, so therefore, the systems should be compatible.

There are different types of chargers that can be put in different areas, depending upon demand. A regular charger can completely charge a dead battery in four hours. A fast charger can completely charge a dead battery in 15 minutes. The difference is \$8,000 for a regular charger and \$90,000 for a fast charger. Charging stations can be integrated into solar carports to supply a charging solution that is cost neutral.

In 2010-2011 new hybrid vehicles will be available that can be plugged in to a charger system. The new vehicles include the Ford Escape PHEV, Toyota Prius PHEV, Mitsubishi iMiEV, and the Mitsubishi PX MiEV. The Federal government is predicting that over four million EVs will be on the road in 2015 while the automotive industry predicts this number will be closer to one million.

The key component to this program is solar power. This program will increase Tempe’s marketability and reduce its environmental impact. Budget neutrality can be accomplished by long term structured financing focused on additional Capital expenditures, City of Tempe ownership within 10 years, and by creating long term revenue streams for the City of Tempe. Increased marketability can be accomplished by making Tempe a destination spot and to get EV drivers to frequent Tempe businesses. There is also a mobile platform to market the sites where chargers are, what type of chargers they are and whether or not they are currently in use and will text customers when their car is done charging. The last goal is concerning the positive environmental impact by reducing the fossil fuel and the electrical consumption for the City.

The pilot program took place in Kyoto, Japan in conjunction with the Kanematsu Corporation. This project is very similar to “plug into the sun” but Kyoto put in 200 level two chargers and fast chargers. They also use solar technology to offset electrical demands.

Mr. Hamby gave a demonstration on how to use the network from a “parking meter” charger. Once a customer is logged into the network it gives the customer a signal to show where sites are located. The customer uses their membership card to gain access to the charger and the charger door will then unlock. The charger is a smart charger and will not charge unless it is plugged into a vehicle. If someone tries to rip the cord from the charger of a vehicle, all power will be shut off immediately so there are no electrical accidents. Customers can program their phones to get an email or text message to shut off the charge at any time or notify the customer when the vehicle is completely charged. Once the customer returns to their car, they swipe their membership card once more and the process is complete.

There are separate membership levels, a pay as you go or an anytime anywhere membership which is approximately \$50 a month, a demand membership which is \$39.95 a month and finally an unlimited area of charging membership which is \$29.95 a month. There is no pre-paid card option yet. Tempe could be the first city in the United States to have this system. If there is no room for a solar panel directly over the charging site, GFT will look at putting solar panels over the top floor of a parking structure near the charger unit(s) or at city facilities.

Vice Mayor Ellis asked if all the cars that are EV have the same plug. Mr. Hamby answered yes; the law requires that all new cars must have the same plug. However, there are cars on the road today that only have the plug for a level one charge. Mr. Hamby is working with EV car clubs to get the equipment needed to utilize the new plugs. It costs around \$8,900 to retrofit a car. Fast chargers would most likely be at gas stations since most people do not want to linger in those locations. These types of batteries are meant to charge slowly; their motors will not last as long if they are charged fast all the time.

GFT is proposing electric vehicle charging stations at marquee locations including City buildings, gas stations, grocery stores, entertainment areas, and in the downtown area, solar to power City buildings and charging stations, 8-15 electric vehicles; a marketing program; and a budget neutral program.

David McNeil asked if part of the budget neutral program was to replace 8-15 of the fleet vehicles to eventually save money on maintenance and gas as well as cut down on electricity costs. The payback period for a ten year deal would be a 10-15% savings on overall costs. At the end of ten years, the City would take ownership and get revenue streams from the chargers. The company would also provide operating and maintenance (O & M) on both the equipment and vehicles. After the ten years is up, the City could then sign a contract for O & M. Of the \$50 a month membership, only \$9 goes to maintenance for the charger and the remainder of the revenue goes to the owner of the charger unit.

In 2008 GFT did a study collecting waste oil to see if it could be broken down and used as bio fuel. They also did a test on hydrogen; it is easy to make, but challenging to regulate and generate revenue.

Vice-Mayor Ellis commented that this cannot be done unless it stays within the budget for the City.

Ms. Collins stated that staff will follow up with the demonstration project representatives and meet with the fleet department staff to discuss their options.

Agenda Item 5 – Future Agenda Items

None

Agenda Item 6 – Future Meeting Dates

The next meeting will be a Sustainability Committee of the Whole tentatively scheduled for June 23rd at 3:00 p.m. The Mayor may appoint a new committee in July, so this sub-committee may or may not be restructured at that time. Vice-Mayor Ellis encouraged staff to attend the Committee of the Whole to share their input on where the sustainability committees are headed.

Agenda Item 7 – Announcements

None

Meeting adjourned at 10:00 a.m.

Prepared by: Jaclyn Levin

Reviewed by: Kay Savard

Jan Hort
City Clerk